DOCUMENT RESUME

ED 184 175 CS 502 855

AUTHOR Spillman, Bonnie; And Others
TITLE A Dynamic Analysis of the Effects of Sex and Androgyny on Leadership Emergence.
PUB DATE Feb 80
NOTE 28p.; Paper presented at the Annual Meeting of the Western Speech Communication Association (Portland, OR, February 16-20, 1980).

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Androgyny; Behavioral Science Research; Females; *Group Dynamics; Higher Education; *Leadership; *Leadership Qualities; *Psychological Characteristics; *Sex Differences
IDENTIFIERS *Communication Research

ABSTRACT

The influence of sex and androgyny on the emergence of small group leadership was studied. The subjects, 38 male and 28 female college students, were pretested on several personality measures, including Sargent and Miller's Leadership Questionnaire and Bem's Sex Role Inventory. Leadership in task and social situations was measured after four group meetings with the Spillman Fuzzy Leadership Matrix (FLM), which each group member used to rate all possible pairs of other group members. One of the most consistent findings was that personality variables influenced leadership emergence only during the initial stages of group interaction. Biological sex and psychological androgyny strongly affected leadership emergence during the first two group sessions, but their influence was minimal during the final two sessions. Contrary to expectations, females emerged as both task and social leaders, possibly because most of the females in the study exhibited masculine or androgynous sex characteristics. This would indicate that the best characterization of social and task leaders is via psychological sex type rather than biological sex. Since sex and sex type accounted for less than 15% of the total variance in leadership structure, other factors appeared to have greater effects on leadership emergence. (RL)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

# A DYNAMIC ANALYSIS OF THE EFFECTS OF SEX AND ANDROGYNY ON LEADERSHIP EMERGENCE

Bonnie Spillman
Department of Rhetoric
University of California
Davis, CA

Richard Spillman
Department of Electrical & Computer Engineering
University of California
Davis, CA

Kim Reinking
Department of Rhetoric
University of California
Davis, CA

## ABSTRACT

A study of the influence of sex and androgyny on the emergence of leadership in small groups was conducted. The results indicated that androgyny has a significant impact on the initial leadership structure but this effect decreases over time.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Bonnie Spillman
Richard Spillman
Kim Reinking

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

# A DYNAMIC ANALYSIS OF THE EFFECTS OF SEX AND ANDROGYNY ON LEADERSHIP EMERGENCE

Stereotyped sex role expectations for men and women in our society have led to predictions that males are more likely to become leaders of small problem solving groups than females. While these findings are a logical outcome of typical socialization patterns, the relationship between sex and leadership is more complex than this simple prediction would suggest. Studies of psychological androgyny have demonstrated that degrees of masculinity, femininity and androgyny may be a stronger predictor of behavior than biological sex. In addition, while lip service has been paid to the dynamic structure of leadership, no study of the influence of relevant variables such as sex and sex-type has been undertaken to determine the changing effects of these variables over time. The purpose of this paper is to examine the dynamic relationship between sex and sex-type and leadership in small discussion groups.

Characterizations of males as task-oriented, dominant and aggressive and complementary characterizations of women as submissive, relational-oriented, and supportive have led to the overall expectation that males will emerge as leaders of small groups more than females. Tindall, et. al. (1978) found this to be the case: men were ranked higher than women as group leaders across three different tasks. Megargee (1969) reported findings similar to these in a study of dominant and submissive males and females. He found dominant males and females emerged as leaders over their submissive partners for both a mechanical and a clerical task when males were paired with males, females with females. In mixed sex dyads dominant males emerged as leaders over submissive females. Submissive males,

however, emerged as leaders over dominant females. Megargee (1969) noted that in nearly all cases the otherwise dominant females offered the leadership position to their male partners; the males did not, as might be supposed, usurp the position from their partner. Thus, even when normally dominant women were paired with normally submissive men, they deferred to the men in the leadership role.

Researchers have discovered differences in communication patterns for males and females which may account for the tendency of males to emerge as dominant leaders. Aries (1976) found that males both initiated and received more interaction than females in mixed sex groups. In same sex groups, moreover, results indicated that women felt uncomfortable assuming leadership roles whereas men reported no such feelings in same sex male groups. In his review, Baird (1976) reported that females tended to withdraw from communication in mixed sex groups whereas males tended to dominate and to interrupt in order to gain control of communication. These and other findings support the assumption that males will emerge as stronger leaders in mixed sex groups than females.

Consistent with the male instrumentality and female helping orientations researchers have assumed that males would be more task than socially or relationally oriented while females would be more relationally than task oriented. Baire (1976) reviewed studies of male-female behaviors in small groups and concluded that, on the whole, women and men behaved in line with stereotyped role expectations. Several specific findings are relevant here. According to categories in the Bales IPA system, males tended to initiate activity while females tended to respond to others; males tended to dominate in task categories while females dominated in

socio-emotional areas; and, males tended to be less opinionated and more informative while females tended to exhibit helpfulness, affiliativeness, and positive expressions of warmth. Because of their aggressive assertive behaviors, males were judged to be higher in activity than females who were judged to be higher in sociability. Aries (1976) thematic analysis of male and female communication in groups supports the task-social distinction found in earlier studies. In all female groups, females discussed themselves, their families and homes, friends and lovers. In all male groups, on the other hand, one of the greatest topics of concern was the relationship among group members. In short, themes of personal intimacy and interpersonal relations dominated in female groups while competitiveness and status dominated male discussions. Rosenfeld and Fowler (1976) have found that the expected female helping orientation is stronger for democratic than for autocratic females. While democratic females were characterized as helpful, affectionate, accepting, desirous of stability and unity, autocratic females were characterized as closed-minded, detached, aggressive, revengful, and in need of controlling the situation. Like the autocratic females, male autocrats were found, among other things, to be revengeful, aggressive, desirous of being recognized as the authority in relationships and outspoken. While these results say as much about the desire for leadership as they do about a task vs. relational orientation, the democratic results are consistent with the traditional predictions regarding male and female orientations. In a later study, Fowler and Rosenfeld (1979) found that democratic male leaders and that democratic female leaders exhibited more positive socio-emotional acts. While these findings are sketchy it is reasonable to assume that females would become stronger social leaders while males

would become stronger task leaders in small problem solving groups.

While no study has looked specifically at the intervening effects of psychological androgyny on leadership emergence, the findings from androgyny studies suggest that psychological sex type may be more important than biological sex in predicting and explaining leadership behavior. The major assumption behind the conceptualization of androgyny is that people who are dominated by either a masculine or a feminine orientation are more influenced by sex role stereotypes than androgynous people. While masculine people perform behaviors in line with an aggressive, dominant and instrumental male orientation, feminine persons behave in line with typical submissive, and helping role expectations. Androgynous persons, on the other hand, are influenced by the requirements of a situation rather than sex role stereotypes (Watson, 1977). In her review of androgyny research, Watson (1977) concluded that:

> The one prediction which received clear support in all five studies is that androgynous men and women are able to respond appropriately to a wide variety of situations regardless of the sex role stereotyping of the situation or the response required of them. Their sex-typed and sex-reversed peers did not display this flexibility of response.

After a series of innercorrelations between self-esteem, self-acceptance, and acceptance of others, Eman and Morris (1977) found that androgynous persons exhibited a personality profile including higher self-esteem than masculine or feminine persons. They also concluded that androgynous persons should be more interpersonally competent than either of the other two types. Patton, et. al. (1977) analyzed communicative interaction with the Ellis relational coding system and reported that masculine oriented people engaged in more controlling behaviors than feminine or androgynous

people. Feminine people engaged in more submissive acts than either masculine or androgynous people and less competitive dominance. Androgynous persons exhibited a more equal distribution of both dominant and submissive acts than either of the other two sex-typed groups. Similarly, Ellis and Skerchock (1979), using the Rogers and Farace coding system, found that masculine people made significantly more dominant control bids than either feminine or androgynous persons. Sequential analysis revealed that males exhibited more competitive interact sequences than the other two types of persons. Feminine interact sequences, on the other hand, showed little stability over time. Communication patterns for androgynous persons showed more dominant bids than for females, but they showed a greater tendency toward equality and relationship stability than masculine people.

These findings suggest that since androgynous persons are more flexible and adaptable in their response sets, performing masculine, feminine or neutral behaviors as they are required by the contingencies of the situation, they should emerge as stronger leaders than either masculine or feminine persons. Although this assumption leads to the prediction that androgynous persons should emerge as leaders for both the task and social dimension of group interaction, masculine people should be the next strongest group on the task dimension and feminine persons should be the second strongest group on the social dimension.

Since communication is both a structural and a spacial phenomenon, many researchers have called for the study of communication over time (Fisher 1974). In the small group literature, several investigators have demonstrated changes in communication and communication effects as a function of time (Fisher, 1970; Ellis, 1975). The question of leadership stability over time has been explored by few investigators (Katz et al, 1957).

The question of the sustaining effects of personality variables over time is also one which has seldom been investigated. An open systems view suggests that interaction variables predominate over initial group composition variables; that is, as a group interacts its interlocking behavioral patterns and inner-member relationships have more effect upon group outcomes than the personalities of members as they enter the group (Fisher and Hawes, 1971). Sorensen and McCroskey (1977) indirectly substantiate this assumption. They observed the dynamic effects of 16 personality traits on small group interaction. Examining interaction behavior at the beginning and end of approximately 18 hours of interaction, they concluded that the influence of personality variables at any given point in group interaction was strongly mediated by group history. Since the attempt to explore the effects of sex and sex-type on leadership is an exploratory one with the effects of time an unknown quantity, the predictions will be that the effects of sex and sex-type will be stronger at the beginning of group interaction than at the end.

Hypotheses

The four hypotheses for this investigation were:

H1. Males will be rated higher on task leadership than females. This difference will decrease over time.

H2. Females will be rated higher on social leadership than males. This difference will decrease over time.

H3. Androgynous persons will be rated higher on task leadership than masculine persons and masculine persons will be rated higher than feminine persons. This difference will decrease over time.

H4. Androgynous persons will be rated higher on social leadership than feminine persons and feminine persons will be rated higher than masculine persons. This difference will decrease over time.

## METHOD

### Participants

Participants were 38 males and 28 females in a beginning course in small group communication at a large western university. Participants chose the course voluntarily and took it to fulfill a requirement in language skills. The course was a pass-fail class. Participants were randomly assigned to ten groups ranging from 5 to 8 members. Group size was uneven due to an initial drop out rate at the beginning of the course.

### Measurement Instruments

All participants were pretested on several personality measures including Bem's Sex Role Inventory, Sargent and Miller's Leadership Questionnaire, and several other measures intended for another study.

The Bem Sex Role Inventory provides a measure of masculinity, femininity, and androgyny. Following the most recent procedure for determining androgyny, individuals who had a masculinity score above the median and a femininty score below the median were categorized as masculine. Those who scored below the median for masculinity and above the median for femininity were categorized as feminine. Androgynous people included those who score above the median on both scales (Watson, 1977).

Leadership was measured at the end of each of four group meetings by the Spillman Fuzzy Leadership Matrix (FLM) (Spillman, Spillman and Bezdek, 1978). This scale provides a matrix whereby each participant rates all pairs of members in the group on a scale from 0 to 1. Unlike other leadership identification procedures the FLM provides data concerning the whole structural hierarchy of leadership. Scores may be averaged across time to produce an individual's total leadership score. The advantages and construction of this measurement technique have been described in

detail elsewhere. The FLM includes one matrix for task and one matrix for social leadership.

The task dimension was defined as those communicative behaviors directly concerned with goal achievement: "Task functions include gathering information, summarizing and suggesting information and opinions, organizing ideas, helping with the division of labor, etc." The social dimension was defined as that dimension concerned with relationships among group members: "Social leadership involves such behaviors as promoting group cohesiveness, easing interpersonal tensions, supporting group identification, making people feel comfortable in the group, etc."

The procedure for calculating individual leadership scores from FLM's for each group is based on a method for determining fuzzy hierarchies developed by Saaty (1978) and modified for use with the FLM by Spillman, Spillman, and Bezdek (1978). It involves: first, applying a linear transformation to each FLM; second, calculating the eigenvector with the largest eigenvalue of each transformed FLM; third, forming a group leadership matrix whose columns consist of the eigenvectors of the transformed FLM's; and fourth, multiplying the group leadership matrix by a weighting vector. The elements of the resulting column vector are the fuzzy leadership scores. A score of one represents maximum perceived leadership strength relative to all other group members.

Procedure

At the beginning of the quarter, all participants were told that they would participate in a study of small group communication simultaneously with completion of their regular course project. Participation was voluntary since students were informed that they could transfer to other sections if they did not wish to participate in the study. Students were informed that

their participation in the study would have no effect upon their grades for the group project.

At the beginning of the quarter, all participants filled out the personality scales. They were randomly divided into mixed sex groups and met four times during the first half of the quarter for an hour each session, before any class readings or discussion of leadership. Discussions were audio taped for later interaction analysis. At the end of each meeting, participants filled out the social and the task leadership FLM. A sample leadership matrix and instructions for filling it out are included in appendix A.

For the group project, students were required to choose a problem for consideration. Their goal was to analyze the problem and to propose a solution and method of implementation. At the end of the fourth meeting, each group handed in a paper outlining the problem and solution according to the five steps of Dewey's problem-solving formula. One grade was given to all group members.

## RESULTS

A total leadership score for each group member was determined by averaging each person's leadership score across all four time periods for each dimension of leadership. Point biserial correlations were calculated for the total leadership scores comparing males with females and the masculine, feminine, and androgynous groups. Point biserial correlations were calculated for each time period comparing each dimension of leadership across both sex and sex-type. Point biserial correlations were also run comparing male and females' scores on the Sargent and Miller Leadership Questionnaire.

Hypothesis One

Table 1 reports the average leadership scores for males and females on the task and social dimensions. Females had significantly higher total leadership scores than males on the task dimension ($r = .25$, $df = 64$, $p < .025$). This difference between groups accounted for 6% of the total variance. Table 2 reports the mean leadership scores across males and females for each time period on both leadership dimensions. Females had significantly higher task leadership scores than males at time one ($r = .28$, $df = 64$, $p < .025$) accounting for 8.33% of the variance. Females also had significantly higher task leadership scores than males at time two ($r = .33$, $df = 64$, $p < .005$) accounting for 11% of the variance. No significant differences were found between males and females at times three and four.

Hypothesis Two

As shown in Table 1, females had higher total social leadership scores than males. The difference was significant ($r = .285$, $df = 64$, $p < .025$) accounting for 8% of the variance. Table 2 shows that females had higher social leadership scores than males at time one ($r = .246$, $df = 64$, $p < .05$) accounting for 6% of the variance. Females also had significantly higher social leadership ratings than males at time two ($r = .35$, $df = 64$, $p < .005$) accounting for 12% of the variance. Again, there were no significant differences at times three and four.

Hypothesis Three

Table 2 also presents the average task and social leadership scores for masculine, feminine, and androgynous groupings. Androgynous persons had significantly higher total task leadership scores than feminine persons ($r = .338$, $df = 37$, $p < .025$) accounting for 11% of the variance. Masculine persons also had significantly higher total task leadership scores than feminine persons ($r = .29$, $df = 39$, $p < .05$) accounting for 8% of the variance. There was no statistically significant difference between androgynous and

masculine persons for their total task leadership scores.

Table 2 reports the mean leadership scores for masculine, feminine and androgynous persons across time. Masculine persons had significantly higher task leadership scores than feminine persons at time one ($r = .29$, $df = 36$, $p < .05$) accounting for 8% of the variance. Though the difference between androgynous and feminine persons approached statistical significance no other comparisons at time one were significant. No other comparisons across the remaining time periods were statistically significant, although the comparison between masculine and feminine persons at time two approached it.

Hypothesis Four

As indicated in Table 2, androgynous persons had significantly higher total social leadership scores than feminine persons ($r = .386$, $df = 37$, $p < .01$) accounting for 15% of the variance. Masculine persons also had significantly higher total social leadership scores than feminine persons ($r = .264$, $df = 31$, $p < .05$) accounting for 7% of the variance. The comparison between androgynous and masculine total social leadership scores was not statistically significant.

Comparisons of social leadership scores for masculine, feminine and androgynous persons at each time period yielded no statistically significant differences.

## DISCUSSION

Hypothesis One

Hypothesis one predicted that males would be rated higher on task leadership than females and that this effect would decrease over time. Only the second prediction was confirmed. In fact, females had higher total task leadership scores than males and higher task leadership scores

at both times one and two than males, however, as expected this effect disappeared at times three and four. If the top ranked person in each group is considered the leader, five groups had a male leader and five a female leader. Taking into account the top two ranking positions, eleven females and nine males emerged at the top of the leadership hierarchy. Even though their hierarchical ranking exhibited no difference between the sexes, women received significantly higher ratings on the FLM than did men.

These findings are particularly intriguing since most studies have found males to be stronger leaders than females and to emerge in the leadership position more often than females. Looking more closely at the data from the personality measures offers two possible explanations for these findings. First, a high proportion of the females in this study, 64%, were characterized as masculine or androgynous sex-typed individuals. Specifically, seven females were masculine, eleven were androgynous, and nine were feminine. This means that a large number of females were acting in ways contradictory to stereotypical sex role expectations. Analysis of the Sargent and Miller Leadership Questionnaire revealed that females were more autocratic than males ($r = .256$, $df = 64$, $p < .025$, see Table 3). As Rosenfeld and Fowler (1976) found autocratic women were more aggressive than democratic women. These two findings together might be interpreted to mean that the females in these groups exhibited an aggressiveness and dominance far beyond behaviors typically expected for their sex. Although an analysis of communicative acts is necessary to validate this assumption, it is possible that males were put off by or deferred to these strong and domineering females.

The second prediction in hypothesis one was that the effects of sex on task leadership ratings would decrease over time. While females received higher leadership scores for the first two sessions, there was an equalizing effect between the sexes during the last two sessions such that there were no differences in leadership scores between males and females, confirming the hypothesis. It appears that group history and communication sequences became more important as group problem-solving continued, diminishing the effect of initial group member characteristics. As people interact in groups, perhaps the effects of sex role stereotypes and other personality factors such as democracy-autocracy and sex-typed behaviors are minimized as members get to know and anticipate each other on a personal level. This finding emphasizes once again the need to study group communicative interaction simultaneously with individual system variables when predicting group outcome effects.

Hypothesis Two

Hypothesis two predicted that females would be rated higher on social leadership than males and that this effect would decrease over time. This hypothesis was confirmed. Females had higher total social leadership scores than males. This effect was sustained from time one to time two, but, again, males' social leadership scores increased producing an equalizing effect between the sexes during the last two sessions. Of the top ranked social leaders for each group, five were male and five female. Of the top two positions in the social hierarchies, eleven females and nine males emerged. Again, rankings alone might indicate no difference in the strength or rating for male and female leadership. Females, however, received higher scores on the FLM on this dimension as on the task

dimension. Interestingly, the fact that females in this study were more autocratic than their male counterpart and the fact that they were behaving in manners contrary to sex role expectations did not reduce their ability to influence group members on the social dimension. In point of fact, the social and task dimension leadership hierarchies were taken into account. A Pearson Product Moment correlation revealed that there was a .782 correlation between the task and social leadership scores ($r = .782$, $df = 64$, $p < .0001$). The correlation accounted for 61% of the total variance. The chances that the same person would emerge as task and social leader, therefore, were extremely high in these groups, indicating that the functions of each dimension are highly related to one another in actual communicative interaction.

Hypothesis Three

Hypothesis three predicted that androgynous persons would be rated higher on task leadership than masculine persons and that masculine persons would be rated higher than feminine persons. These effects were expected to decrease over time. This hypothesis was partially confirmed. For total leadership scores, androgynous persons had higher task leadership scores than masculine persons, but not significantly so. Androgynous and masculine persons both had significantly higher total leadership scores than feminine persons as the androgyny literature suggests. Consistent with the total leadership scores, an examination of the top task rankings indicated that five of the top ranked task leaders were masculine and five were androgynous. Of the top two ranked positions, nine were androgynous, ten were masculine, and one was feminine. Since feminine persons are rated significantly lower and are found in only one of twenty leadership positions, the data strongly suggest that masculine aggressiveness is a necessary requirement for

achieving a high leadership ranking. Apparently androgynous persons, with their ability to adapt their behaviors to the requirements of a situation, possess the ability to assume aggressive and masculine behaviors which make them eligible for task leadership positions. The importance of this conclusion is made more interesting when we remember that females were able to demonstrate these qualities to a higher degree than males. Apparently both female behaviors and the responses to them are changing in our society.

The strong effects of androgyny and masculinity are mitigated by group interaction over time. At time one, masculine persons had higher task leadership scores than feminine persons and the difference between androgynous and feminine approached significance. Although the means continue to display the same order for the last three sessions, no statistically significant differences were found between these groupings. Like biological sex, the effects of psychological sex-typing diminished over time. This equalizing effect occurred because feminine leadership scores increased over time, although they never reached the highest leadership positions or achieved the highest task leadership scores on the FIM.

Hypothesis Four

Hypothesis four predicted that androgynous persons would be rated higher on social leadership than feminine persons, that feminine persons would be rated higher than masculine persons, and that these effects would decrease over time. This hypothesis was partially supported. Findings on the social dimension were similar to those on the task dimension. As predicted, total social leadership scores indicated that androgynous presons scored significantly higher than feminine

persons. Contrary to the prediction, however, masculine persons had higher social leadership scores than feminine persons. For the top social leadership ranking, five leaders were androgynous and five masculine. For the top two rankings ten were androgynous persons, nine were masculine and one was feminine. There is apparently a difference between displaying socially supportive behavior and taking the leadership role in fulfilling this function for a group. Feminine persons displayed higher social than task leadership ratings ($r = .335$, $df = 26$, $p < .05$) accounting for 11% of the variance. While only one feminine person ranked in the top two task leadership positions at any time period, the number of feminine persons rising to one of the top two social leadership positions was: two during time period one; four during time period two; three during time period three; and, four during time period four. These differences in leadership scores suggest that feminine persons are displaying more social than task oriented behaviors. That they do not rise to social leadership positions in any significant numbers, however, suggests that they are not displaying these behaviors in any systematic or dominant fashion.

Conclusions

One of the most consistent findings of this investigation is that personality variables influence leadership emergence only during the initial stages of group interaction. Both biological sex and psychological androgyny strongly affected leadership emergence on the task and social dimension during the first two sessions of group discussion, but their influence was minimal during the final two sessions. These findings lend strong support to the view of small groups as open systems which, although affected by their initial states, are far more influenced by

the development of relationships and sequences of interaction during a system's evolution. This conclusion does not necessarily lead to the implication that communication researchers should abandon the study of personality variables; it does, however, strongly argue for the study of all group processes and outcomes over time so that the influence of antecedent variables can be balanced against the effects of interaction. Only then can a true picture of small group communication and leadership emergence be obtained.

A second conclusion is that while sex and sex-type influence initial leadership structure for both task and social dimensions, they only account for from 6 to 15% of the total variance. This indicates that other factors have a stronger effect upon the process of leadership emergence. Such variables as task, leadership style, dogmatism, communication apprehension, and member motivations should be combined with considerations of sex and sex-type to determine their relative importance over the short and long range.

A third conclusion is that the best characterization of social and task leaders is via psychological sex-type rather than biological sex. Females emerged as both task and social leaders in this study and received higher total leadership scores in both categories. In examining the reason for this situation, it appears that behaviors associated with masculinity are positively associated with both types of leadership. Androgynous persons, because they are capable of performing these behaviors emerge even more strongly than masculine persons as both social and task leaders. Feminine persons, although they seemed to perform important social functions, did not seem to possess the aggressiveness or perhaps the competitiveness, to emerge as leaders even in the

dimension in which they are ordinarily presumed to dominate. That masculine aggressiveness is a leadership requirement, however, does not mean that only males predominate, as shown by the tendency for females to be rated higher.

A fourth conclusion concerns the utility of the FLM. Developed in an earlier leadership study by Spillman, Spillman, and Bezdek (1978), it was suggested that the instrument would provide more information than most other leadership identification procedures. Not only would it provide information concerning the entire leadership hierarchy rather than merely the top ranked positions, but it would also provide more exact information than ranking procedures since the intervals between ranks would be known. The present study has borne out the advantages predicted in that early investigation. A shared leadership perspective assumes that all persons in a group perform leadership functions to one extent or another. The FLM allowed that entire structure to be tapped to determine the relative positions of all members of the group. By taking into account all memebers' scores rather than asking the group members to label a single leader, the present investigators were able to determine the relationship between sex and sex-type on all levels of leadership. If the single leader identification technique had been used in this study, results would have indicated that five groups had male and five groups had female leaders. The conclusion would have been that there is no significant interaction between sex and leadership. A similar conclusion would have been drawn for sex-type, since five leaders were androgynous and five were masculine, the method would have found the significant difference between the feminine group and the masculine and androgynous groups, but all distinctions between masculinity and androgyny would have been lost.

In the same fashion, the FLM provides a better method for observing and measuring structural changes in leadership hierarchies over time. By having specific measures of each individual's leadership score, an investigator can look not only at the relative rank of each member, but the strength of each person or group's leadership as it changes. In this investigation, for example, feminine persons remained, for the most part, at the bottom of the leadership hierarchy. As time progressed, however, their task leadership scores increased relative to androgynous and masculine persons, thus equalizing the effect of sex-type across the four sessions.

A concrete illustration of the advantages of the FLM in revealing intricate changes in structure over time which would not be revealed by the single leader identification or the rank ordering techniques is provided by analyzing the data from one of the ten groups in this study (see Table 4). The person labeled as the top ranking leader of the group would not have changed. An examination of the leadership scores on the FLM, however, revealed a constantly increasing leadership strength over these three time periods. In addition, the rank orderings for the first three time periods are identical. The obvious assumption would be that this group exhibited a stable leadership structure with respect to rank orderings. This would lead to the logical conclusion that the influence of initial personality variables remained the same over all three time periods which, given the results of the present investigation, is obviously not the case. An examination of the leadership scores on the FLM reveal a leadership structure in which the strength of leadership for one person relative to all others is constantly in flux. For example, member four was ranked fourth through all time periods. By the third

time period, however, her leadershp score was almost equal to member three's score. The relative difference in leadership strength of the first and second ranked persons also decreased across time, leaving the third ranked person much lower in relative status than he had been in the first session.

The results of the present investigation clearly indicate the need to investigate further the dynamic nature of leadership. The impact of sex and sex-type variables needs to be gauged further by balancing them against other personality and environmental factors. Given the small sample size in this study, these findings need to be replicated in future research with this and other kinds of tasks. Finally, an analysis of communication patterns associated with various leadership structures would help to illuminate the interaction between antecedent variables and interaction patterns on leadership emergence.

## APPENDIX A

## GROUP LEADERSHIP QUESTIONNAIRE

Attached to this page are two scales intended to measure your perceptions of leaders in your group. Results from this investigation will be kept confidential. Please read the directions carefully and fill out the scales.

Directions

For each of the scales, you are to rate each pair of individuals one against the other, on their leadership in your group. Ignore the cells in the matrix filled in with an X. Only use the blank squares.

For each comparison, place a number between 0 and 1 in the blank to represent your evaluation of their relative leadership performances. Place a number between .51 and 1 if the individual labeled by the column performed more leadership functions than the person named in the row. A 1 means that the individual named in the column was a very strong leader compared to the individual named in the row, and a .51 indicates that the individual named in the column is only slightly more of a leader than the individual named in the row. A rating of .5 indicates either that the two comparison people are equally leader-like or that there is no difference in the amount of strength of their leadership performance. Place a number between 0 and .49 if the individual labeled by the row displayed more leadership than the individual named in the column. A 0 means that the individual in the row was a very strong leader compared to the individual named by the column. A .49 rating indicates that the individual named by the row displayed only slightly more leadership than the person named in the column.

Example

Below are two matrices (one for task and one for social leadership) which demonstrate the kinds of ratings you are to do with your group. Note carefully that the two matricies may be different ant that you are free to use any number between 0 and 1. Simply keep the points 1, .5, and 0 in mind and remember that you are rating the person in the column over the person in the row.

Note in the social matrix that when Bob is compared with Ramona on his social leadership he is much stronger (1). When Bob is compared with Wendy, however, he is stronger but not by as much (.67). Wendy is a stronger social leader than Ramona since that comparison yields a (.1).

For the task matrix, Wendy appears to be a stronger leader than Bob, receiving at (.2). Wendy and Ramona appear to be equally strong. Bob and Ramona are close but Ramona is slightly stronger that Bob (.45).

| | BOB | RAMONA | WENDY |
|---|---|---|---|
| BOB | X | X | X |
| RAMONA | 1 | X | X |
| WENDY | .67 | .1 | X |

SOCIAL

| | BOB | RAMONA | WENDY |
|---|---|---|---|
| BOB | X | X | X |
| RAMONA | .45 | X | X |
| WENDY | .2 | .5 | X |

TASK

| | SEX | TOTAL | TIME 1 | TIME 2 | TIME 3 | TIME 4 |
|---|---|---|---|---|---|---|
| TASK | MALE | .55 | .518 | .512 | .612 | .588 |
| | FEMALE | .62 | .601 | .6 | .687 | .616 |
| SOCIAL | MALE | .63 | .539 | .575 | .654 | .742 |
| | FEMALE | .67 | .606 | .658 | .705 | .725 |

Table 1: Average Leadership Scores for Males and Females

| | SEX-TYPE | TOTAL | TIME 1 | TIME 2 | TIME 3 | TIME 4 |
|---|---|---|---|---|---|---|
| TASK | MASCULINE | .575 | .581 | .583 | .679 | .615 |
| | ANDROGYNOUS | .607 | .567 | .543 | .614 | .614 |
| | FEMININE | .497 | .474 | .485 | .596 | .563 |
| SOCIAL | MASCULINE | .635 | .58 | .625 | .716 | .77 |
| | ANDROGYNOUS | .673 | .582 | .611 | .69 | .733 |
| | FEMININE | .574 | .496 | .579 | .605 | .685 |

Table 2: Average Leadership Scores across Sex-Type

| MALE | FEMALE |
|---|---|
| 5.97 | 5.29 |

Table 3: Average Autocratic Scores

| MEMBER | TIME 1 | TIME 2 | TIME 3 |
|---|---|---|---|
| 1 | .77 | .885 | .987 |
| 2 | .663 | .842 | .96 |
| 3 | .656 | .737 | .705 |
| 4 | .562 | .607 | .705 |
| 5 | .328 | .462 | .495 |
| 6 | .27 | .384 | .314 |

Table 4: Leadership Scores for Group 4

## REFERENCES


Aries, E., "Interaction Patterns and Themes of Male, Female, & Mixed Groups," Small Group Behavior, 7(1976), 7-18.

Baird, John E., "Sex Differences in Group Communication: A Review of Relevant Research," QJS, 62(1976), 179-192.

Bem, Sandra L., "The Measurement of Psychological Androgyny," Journal of Consulting and Clinical Psychology, 42(1974), 155-162.

Ellis, Don G., "A Systemic Model of Conflict in Small Groups," presented at the Western Communication Association Convention, Seattle, 1975.

Ellis, Don G. and Skerchock, Linda, "Relational Control Sequences in Sex-Typed and Androgynous Groups," presented at the ICA Convention, Philadelphia, 1979.

Eman, Virginia A. & Morris, Benjamin W., "A Multivariate Analysis of the Relationship between Androgyny and Self-Esteem, Self-Acceptance, and Acceptance of Others," presented at the SCA Convention, Washington, D.C., 1977.

Fisher, B.A., "Decision Emergence: Phases in Group Decision Making," SM, 37(1970),53-65.

Fisher, B.A. Small Group Decision Making, (New York: McGraw-Hill, 1974).

Fisher, B.A. & Hawes, L., "An Interact System Model: Generating a Grounded Theory of Small Groups," QJS, 57(1971), 444-453.

Fowler, Gene & Rosenfeld, L., "Sex Differences & Democratic Leadership Behavior," presented at the WSCA Convention, Los Angles, 1979.

Katz, E., Blau, P.M., Brown, M.L. & Strodtbeck, F.L., "Leadership Stability and Social Change: An Experiment with Small Groups," Sociometry, 20(1957), 36-50.

Megargee, E.I., "Influence of Sex Roles on the Manifestation of Leadership," Journal of Applied Psychology, 53(1969), 377-382.

Patton, B.R., Jasnoski, M., & Skerchock, L., "Communication Implications of Androgyny," presented at the SCA Convention, Washington, D.C., 1977.

Rosenfeld, L. & Fowler, G., "Personality, Sex, and Leadership Style," CM, 43(1976), 320-324.

Saaty, T.L., "Exploring the Interface Between Hierarchies, Multiple Objectives and Fuzzy Sets," Fuzzy Sets and Systems, 1(1978), 57-68.

Sorensen, G. & McCroskey, J., "The Prediction of Interaction Behavior in Small Groups: Zero History Versus Intact Groups," CM, 44(1977), 73-80.

Spillman, B., Spillman, R., & Bezdek, J., "An Interactive, Perceptual and Shared Perspective on Leadership: Development of a Fuzzy Measurement Procedure," presented at SCA Convention, Minneapolis, 1978.

Tindall, J.H., Boyler, L., Cline, P., Emberger, P., Powell, S., & Wions, J., "Perceived Leadership Rankings of Males and Females in Small Task Groups," Journal of Psychology, 100(1978),13-20.

Watson, C., "The Conceptualization and Measurement of Psychological Androgyny," presented at the SCA Convention, Washington, D.C., 1977.

Tindall, J.H., Boyler, L., Cline, P., Emberger, P., Powell, S., & Wions, J., "Perceived Leadership Rankings of Males and Females in Small Task Groups," Journal of Psychology, 100(1978),13-20.

Watson, C., "The Conceptualization and Measurement of Psychological Androgyny," presented at the SCA Convention, Washington, D.C., 1977.